

## Supplementary Online Content

Kong L, Nilsson IAK, Gissler M, Lavebratt C. Associations of maternal diabetes and body mass index with offspring birth weight and prematurity. *JAMA Pediatr*. Published online February 25, 2019. doi:10.1001/jamapediatrics.2018.5541

**eTable.** Demographic Characteristics of Offspring and Their Mothers (N = 649,043 births)

**eFigure 1.** Odds Ratio (OR) for Offspring Large for Gestational Age (1.a) and Prematurity (1.b) in Relation to Maternal BMI and Diabetes

**eFigure 2.** Odds Ratio (OR) for Offspring Spontaneous Delivery (Without Planned Caesarean Section) in Relation to Maternal Diabetes

This supplementary material has been provided by the authors to give readers additional information about their work.

**eTable 1.** Demographic Characteristics of Offspring and Their Mothers (N = 649,043 births)

<b>Variables</b>	<b>No DM N=542,735</b>	<b>DM-IT<sup>a</sup> N=4,000</b>	<b>T2DM<sup>b</sup> N=3,740</b>	<b>GDM N=98,568</b>
	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>
<b>Offspring birth year</b>				
2004	47,394 (8.7)	293 (7.3)	441 (11.8)	9,328 (9.5)
2005	48,247 (8.9)	307 (7.7)	388 (10.4)	8,589 (8.7)
2006	49,803 (9.2)	349 (8.7)	421 (11.3)	8,192 (8.3)
2007	49,242 (9.1)	349 (8.7)	408 (10.9)	8,631 (8.8)
2008	50,391 (9.3)	325 (8.1)	370 (9.9)	8,425 (8.5)
2009	51,065 (9.4)	369 (9.2)	354 (9.5)	8,701 (8.8)
2010	51,506 (9.5)	382 (9.6)	323 (8.6)	8,913 (9.0)
2011	49,905 (9.2)	371 (9.3)	322 (8.6)	9,418 (9.6)
2012	49,529 (9.1)	400 (10.0)	258 (6.9)	9,435 (9.6)
2013	48,063 (8.8)	429 (10.7)	247 (6.6)	9,583 (9.7)
2014	47,590 (8.8)	426 (10.7)	208 (5.5)	9,353 (9.5)
<b>Offspring sex</b>				
Boy	276,934 (51.0)	2,025 (50.6)	1,937 (51.8)	50,949 (51.7)
Girl	265,801 (49.0)	1,975 (49.4)	1,803 (48.2)	47,619 (48.3)
<b>Number of fetuses</b>				
1	525,875 (96.9)	3,892 (97.3)	3,684 (98.5)	97,047 (98.5)
2	16,535 (3.0)	105 (2.6)	55 (1.5)	1,510 (1.5)
3	321 (0.1)	3 (0.1)	1 (0.0)	11 (0.0)
4	4 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
<b>Mode of delivery</b>				
Vaginal	410,596 (75.7)	1,232 (30.8)	2,431 (65.0)	70,876 (71.9)
Instrumental	46,077 (8.5)	265 (6.6)	256 (6.8)	7,638 (7.7)
Planned CS	34,326 (6.3)	1,239 (31.0)	466 (12.5)	8,039 (8.2)
Other CS	51,351 (9.5)	1,261 (31.5)	586 (15.7)	11,982 (12.2)
Missing	385 (0.0)	3 (0.1)	1 (0.0)	33 (0.0)
<b>Maternal age (years)</b>				
<20	13,618 (2.5)	89 (2.2)	55 (1.5)	1,417 (1.4)
20–24	87,454 (16.1)	627 (15.7)	407 (10.9)	12,005 (12.2)
25–29	174,323 (32.1)	1,271 (31.8)	949 (25.4)	28,669 (29.1)
30–34	170,732 (31.5)	1,220 (30.5)	1,179 (31.5)	32,039 (32.5)
35–55	96,608 (17.8)	793 (19.8)	1,150 (30.7)	24,438 (24.8)
<b>Parity</b>				
0	232,552 (42.9)	1,778 (44.4)	1,226 (32.8)	35,800 (36.3)
1	183,505 (33.8)	1,370 (34.2)	1,095 (29.3)	32,083 (32.5)
2	77,260 (14.2)	523 (13.1)	685 (18.3)	16,935 (17.2)
3	25,616 (4.7)	179 (4.5)	309 (8.2)	7,020 (7.1)
4 or more	23,372 (4.3)	148 (3.7)	422 (11.3)	6,684 (6.8)
Missing	430 (0.1)	2 (0.1)	3 (0.1)	46 (0.1)
<b>Mother's marital status</b>				
Married	493,350 (90.9)	3,592 (89.8)	3,369 (90.1)	90,773 (92.1)

Unmarried	49,385 (9.1)	408 (10.2)	371 (9.9)	7,795 (7.9)
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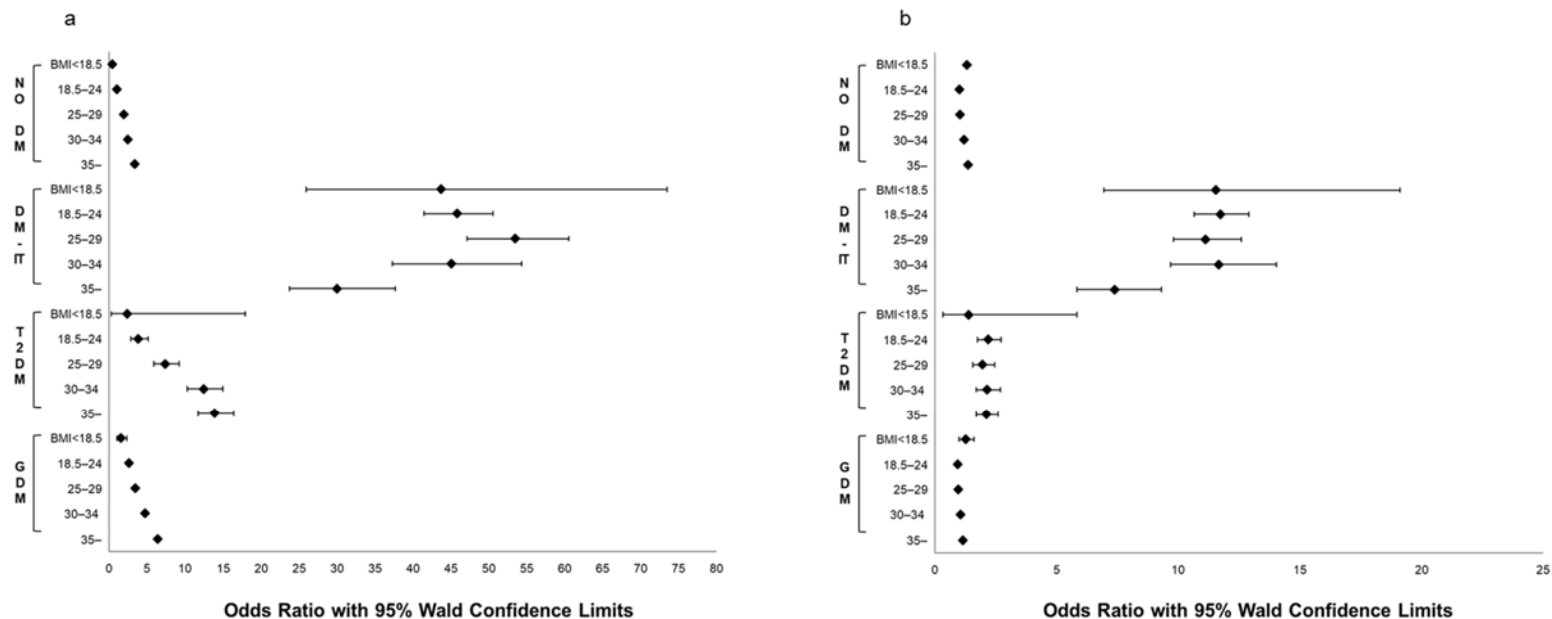
<b>Variables</b>	<b>No DM N=542,735</b>	<b>DM-IT<sup>a</sup> N=4,000</b>	<b>T2DM<sup>b</sup> N=3,740</b>	<b>GDM N=98,568</b>
	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>	<b>No. (%)</b>
<b>Mother's country of birth</b>				
Finland	492,322 (90.7)	3,818 (95.5)	3,286 (87.9)	88,674 (90.0)
Other	48,839 (9.0)	182 (4.5)	444 (11.9)	9,789 (9.9)
Missing	1,574 (0.3)	0 (0.0)	10 (0.2)	105 (0.1)
<b>Maternal smoking</b>				
No	449,304 (82.8)	3,204 (80.1)	2,892 (77.3)	79,986 (81.2)
Stopped in 1 trimester	26,878 (4.9)	236 (5.9)	178 (4.8)	5,621 (5.7)
Continued	53,680 (9.9)	460 (11.5)	544 (14.5)	10,464 (10.6)
Missing	12,873 (2.4)	100 (2.5)	126 (3.4)	2,497 (2.5)
<b>Maternal BMI [kg/m<sup>2</sup>]</b>				
<18.5	21,817 (4.0)	65 (1.6)	29 (0.8)	1,150 (1.2)
19–24	348,913 (64.3)	1,840 (46.0)	898 (24.0)	32,518 (33.0)
25–29	101,572 (18.7)	1,068 (26.7)	857 (22.9)	30,823 (31.3)
30–34	30,672 (5.7)	475 (11.9)	806 (21.5)	17,859 (18.1)
35–	10,945 (2.0)	349 (8.7)	941 (25.2)	11,512 (11.6)
Missing	28,816 (5.3)	203 (5.1)	209 (5.6)	4,706 (4.8)

Abbreviations: CS, caesarean section. BMI, Body mass index [kg/m<sup>2</sup>]. No DM, none of DM-IT, T2DM or GDM. DM-IT, pre-gestational diabetes with insulin treatment according to purchase of insulin prior to pregnancy. T2DM, pre-gestational type 2 diabetes (ICD-10 E11, E14, O24.1 and/or ATC A10B) without insulin treatment, according to purchase of insulin, prior to pregnancy. GDM, gestational diabetes according to an ICD-10 O24.4 diagnosis.

<sup>a</sup> DM-IT excluded T2DM and GDM.

<sup>b</sup> T2DM excluded GDM.

**eFigure 1.** Odds Ratio (OR) for Offspring Large for Gestational Age (1.a) and Prematurity (1.b) in Relation to Maternal BMI and Diabetes



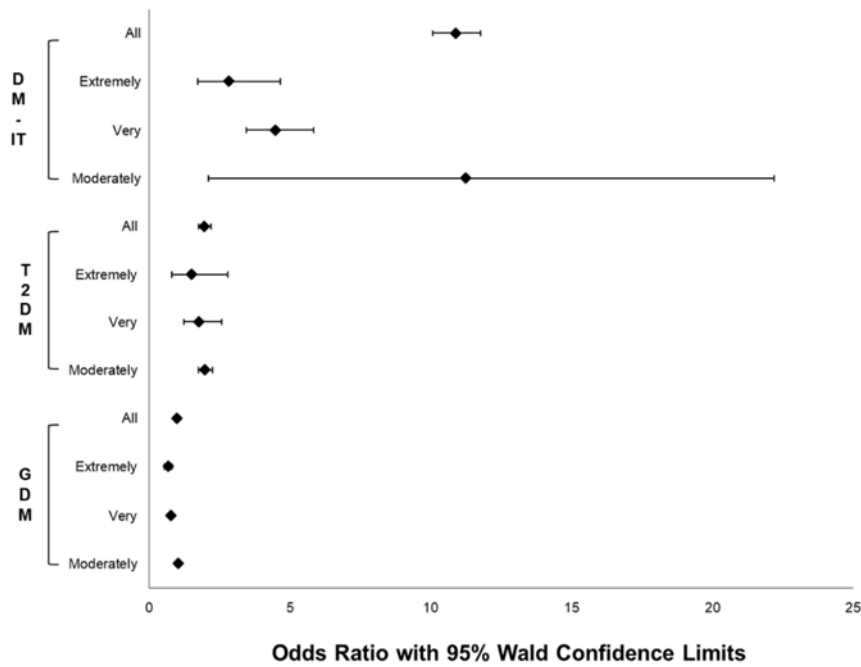
The models were adjusted for offspring birth year, maternal age, parity, mother's country of birth and maternal smoking. Reference: Births to normal-weight mothers without diabetes.

Abbreviations: LGA, large for gestational age; a birth weight and/or length 2 SD above the sex- and gestational age-specific reference mean<sup>1</sup>, according to the International Societies of Pediatric Endocrinology and the Growth Hormone Research Society<sup>2</sup>. DM-IT, pre-gestational diabetes according to purchase of insulin prior to pregnancy. T2DM, pre-gestational type 2 diabetes (ICD-10 E11, E14, O24.1 and/or ATC A10B) without insulin treatment prior to pregnancy. GDM, gestational diabetes according to an ICD-10 O24.4 diagnosis. No DM, none of DM-IT, T2DM or GDM. BMI, body mass index [kg/m<sup>2</sup>].

<sup>1</sup>Sankilampi U, Hannila M-L, Saari A, Gissler M, Dunkel L. New population-based references for birth weight, length, and head circumference in singletons and twins from 23 to 43 gestation weeks. *Annals of medicine*. 2013;45(5-6):446-454.

<sup>2</sup>Clayton P, Cianfarani S, Czernichow P, Johannsson G, Rapaport R, Rogol A. Management of the child born small for gestational age through to adulthood: a consensus statement of the International Societies of Pediatric Endocrinology and the Growth Hormone Research Society. *The Journal of Clinical Endocrinology & Metabolism*. 2007;92(3):804-810.

**eFigure 2. Odds Ratio (OR) for Offspring Spontaneous Delivery (Without Planned Caesarean Section) in Relation to Maternal Diabetes**



The models were adjusted for offspring birth year, maternal age, parity, mother's country of birth and maternal smoking. Reference: No DM (none of DM-IT, T2DM or GDM) and being full-term ( $\geq 37$  gestational weeks).

Abbreviations: DM-IT, pre-gestational diabetes according to purchase of insulin prior to pregnancy. T2DM, pre-gestational type 2 diabetes (ICD-10 E11, E14, O24.1 and/or ATC A10B) without insulin treatment prior to pregnancy. GDM, gestational diabetes according to an ICD-10 O24.4 diagnosis. No DM, none of DM-IT, T2DM or GDM. DM-IT excluded T2DM and GDM; T2DM excluded GDM. Extremely preterm, <28 weeks gestation. Very preterm, 28-31 weeks gestation. Moderately preterm, 32-36 weeks gestation.